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SURVIVAL

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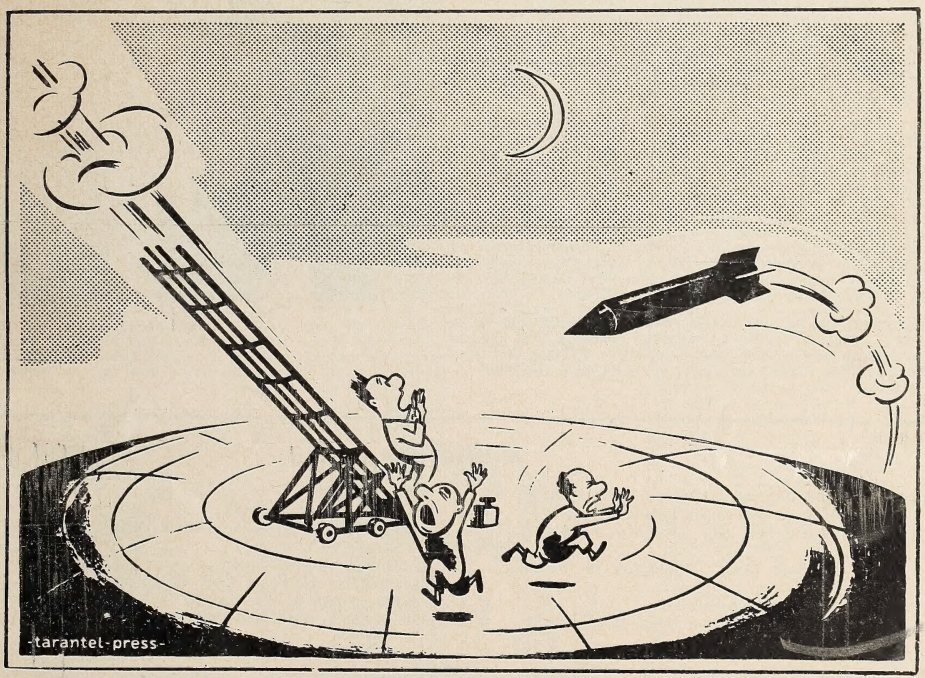
THE HONOURABLE L. C. HALMRAST MINISTER

VOLUME 1, NUMBER 3

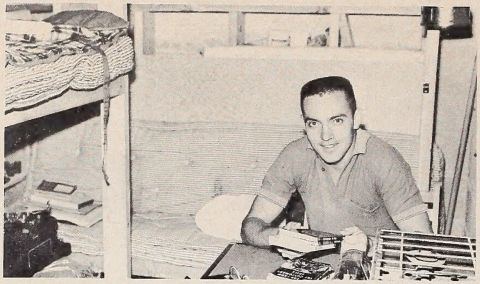
JULY-AUGUST 1962

ARNOLD J. LAVOIE CO-ORDINATOR



Help! It's one of ours. (From "Zivilschutz")

See "MISSILES FOR THE MILLIONS" by R. A. (Bob) McAlpine—Page Six

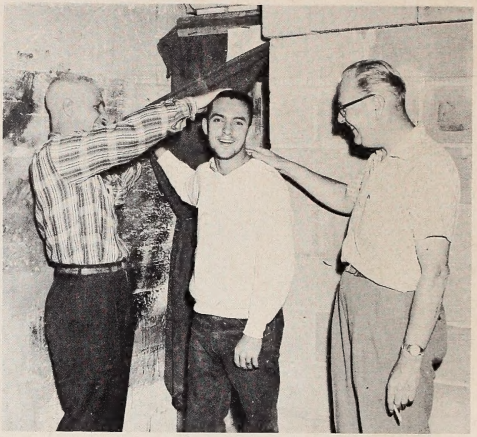


LETHBRIDGE HERALD REPORTER SURVIVES SHELTER ORDEAL

Captioned FAREWELL . . . CRUEL WORLD . . . the picture left shows reporter David White with books, typewriter and radio, as he goes into a week's seclusion in a model fallout shelter. His stories were pushed out through a slot in the shelter wall and published daily.

Below: Emerging a week later, reporter White is greeted by Civil Defence Director Bill Falconer (left) and Managing Editor Bill Hay (right). He had lost seven and a half pounds but was delighted to find his landlady was outside the shelter to meet him with a home-cooked meal.

—Lethbridge Herald Staff photos.



Presenting a feature which will probably set a record for the amount of space devoted to a Civil Defence project by any Canadian daily newspaper, The Lethbridge Herald assigned reporter David White to spend a week in a model fallout shelter, June 20 to 27, and devoted 289 column inches (well over a page and a half) of pictures and news releases to covering the event.

White, totally shut off from human contact, wrote stories sharing his emotions with readers throughout the seven days of his incarceration. He described his feeling as he passed through phases which included minor irritations becoming magnified by isolation, time distortion as the days seemed to get longer, confusion and depression followed by elation as the time for his release drew near.

In a follow-up article printed July 3, White summed up his experience by saying that despite the many tensions, he came out well-rested physically and mentally and that he believes that a family of five could duplicate his feat. His main criticism was the poor quality of air, accentuated by the fact that the terms of the experiment called for a door on the shelter to be kept closed. (Basement fallout shelters have no door, using a curtain to control ventilation. Outside shelters should be equipped with doors and mechanical ventilations aids.) A Herald editorial the same day stressed that a family would have better psychological factors "because they would have company in their misery."

The whole episode was instrumental in demonstrating to the entire area, the feasibility of fallout shelter living, and shows a most conscientious and imaginative attitude to its obligations to its readers by one of Alberta's most respected newspapers.

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Survival is published bi-monthly by Alberta Emergency Measures. In addition to publishing articles which reflect Provincial Government policy, Survival may also publish items by private individuals on subjects of current interest. The views of such contributors are not necessarily subscribed to by the government.

Any article or item of news which originates in Survival may be quoted or republished freely by other publications. A credit line stating this publication as the source should be included. A copy of any issue containing such items would be appreciated by the editor for record purposes. Please address communications to "SURVIVAL," Box 275, Edmonton, Alberta.

A PR MAN IN EMOLAND

NONE BUT THE BRAVE DESERVES THE FAIR

—JACK DAY LONG
AFTER JOHN DRYDEN

During July we spent time manning display booths at the Calgary Stampede and the Edmonton Exhibition in an attempt to cultivate a grass roots interest in Civil Defence and embue visitors with the desire to prepare now for personal survival.

At a time when visitors are pleasure-bent and determined to enjoy all the fun of the fair, one might imagine that their attitude to someone who insists on injecting a discomforting note of reality would be hostile in the extreme, but this was seldom so. Some passed by with averted gaze refusing to notice, some took literature with a limp hand but kept walking, not wishing to be detained, but many accepted the opportunity for a talk and asked pertinent and intelligent questions. Some expressed surprise when they found how much was being done by the Emergency Measures Organization and showed a sudden awakening of interest and an almost aggressive desire for the facts.

Most of the people who harboured vague misgivings about the value of fall-out protection were most impressed with the evaluation of the threat in terms of total destruction from a nuclear explosion involving 35 square miles—against 7,000 square miles which might well be covered by fallout. This simple presentation of the truth was rapidly assimilated and seemed immediately meaningful. The statement that even if six such bombs fell in Alberta, three quarters of the total area of the province would be untouched, even by fall-out, added an optomistic note and convinced many that the cry of opponents of Civil Defence that war would mean the end of the world is hysterical nonsense.

Perhaps the most depressing thing about this most primitive of all methods of spreading our message to the people was the fact that the tiny minority most violently opposed to Civil Defence would not state its views at all. One man obviously with strong feelings who refused a booklet, simply stated that he didn't believe in preparedness against nuclear weapons. Since he represented the group to which we were most anxious to present our side of the picture I asked him whether he believed in fire drill in schools or lifeboat drill in liners. He replied that he did not. I asked him, somewhat hurredly since he was moving slowly away, whether if he found he had cancer he would immediately give up and commit suicide or whether he would attend a doctor and he replied that he would prefer to die, at which point he passed out of range.

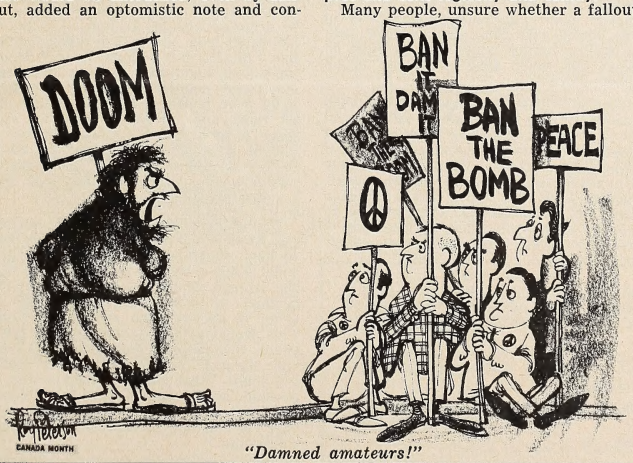
The effect on the crowd was to win us smiling, though undeserved, respect, branding our opponents as unrealistic, with nothing legitimate to offer in debate. This was unfortunate since we respect the rights of our people to hold whatever views they choose and desire nothing more than the opportunity for free and honest discussion. **At no time in either Calgary or Edmonton did I meet anyone with strong and valid arguments prepared to discuss the pros and cons logically and calmly.**

Many people, unsure whether a fallout shelter would prove to be death or deliverance, listened attentively to our explanation that since all the available information regarding the value of such shelters must originally come from the authorities making nuclear tests, and since much of the information gained from such tests is still secret, it is strange that so many self-appointed experts, without all the available facts, decry the use of this means of protection, while the people in a position to evaluate **ALL** the factors involved, are unanimously in favour of such shielding.

We mentioned a recent news release from the Department of Defence in Washington which points out that the President of the United States has taken an oath to do everything in his power to protect the American people and that he, together with the Secretary of Defence and other leading officials of Government, with more reliable information than any other group on earth, after elaborate systems of evaluating data and with unchallengable integrity since they have no other motive than the survival of the people, have arrived at the conclusion that fallout radiation from nuclear attack can be greatly reduced by the use of fallout shelters and that this means of protection could save millions of lives. Regardless of politics or profession, every visitor faced with this simple truth, saw arguments to the contrary pale into insignificance.

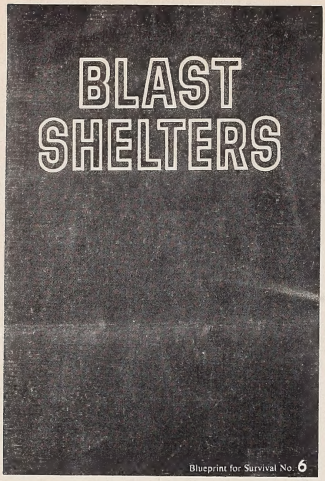
Plague of the life of attendants like ourselves were the inevitable small boys who procured large carrier bags from a meat packing house display and preceeded to fill them with literature without regard to its content. Whooping crowds of them descended en masse with the exultation a prospector must feel on discovering the mother lode of a gold mine, and preparing to take one copy of each of the ten booklets we had on show. With fine regard for the taxpayers money, we kindly but firmly told them the booklets were for householders only. Apart from the occasional objection that "We live in a house" usually from a grubby specimen ear-deep in candy floss, the youngsters accepted our offer of a warning signal wallet card graciously, and took off for further fields to conquer.

One minor highlight occurred when a diminutive smart-alec of perhaps 12 years, obviously quoting an anecdote he had picked up from his elders, brassily told me "My teacher told me to draw a fallout shelter, so I drew a coffin". Smiling urbanely I replied with deliberate calm, "My, you are a precocious young ignoramus aren't you". He grinned broadly at the believed compliment, "I sure am" he said proudly.



"Damned amateurs!"

NEW BOOKLET LAST OF FEDERAL SERIES



Blueprint for Survival No. 6, Blast Shelters is now available for distribution to Alberta residents. It explains in well-illustrated detail the effects of radiation, blast, and heat, released from the detonation of a nuclear weapon and outlines the protective factors necessary for survival, pointing out the major differences between blast shelters and fall-out shelters which have been the subject of previous publications.

Plans and specifications for three varieties of blast shelters are available as supplements to the booklet. They include plans for family sized and 30-person shelters with 10 and 30 pounds per square inch blast protection. Alberta Department of Public Works estimates the approximate cost of a 10 psi family shelter at from $2,700 when built totally above grade in conjunction with a new construction, to $3,350 when built completely below grade as an addition to an existing building. Shelters with a 30 psi blast resistance and a 30-person capacity should range in price from $7,490 to $10,130.

Copies of the booklet are available without charge by writing to box 10,00, Edmonton.

BRITAIN'S VICTOR BOMBER
Safeguard Against Surprise Attack

"Seven out of ten of the targets earmarked for the first strike in retaliation to a Russian attack would be engaged by the R.A.F."

The RAF'S "KNOCKOUT BLOW"

Never-before released information about Royal Air Force retaliatory bomber forces armed with all-British, Mark 2 H-bombs powerful enough to wipe out Moscow or Leningrad and destroy 95 per cent of 3,000,000 population, were revealed in an article by scientific reporter Chapman Pincher, recently published in The Christchurch Star, New Zealand, after what was described as "the most detailed disclosure of Britain's deterent strength ever permitted by the security chiefs."

For many years scientific editor of Lord Beaverbrook's Fleet Street based Daily Express, Pincher tells of the new Vulcan and Victor front line bombers, each in constant readiness with pre-assigned targets, **and capable of flying higher and faster than United States B52 aircraft, at altitudes of ten miles. The planes are equipped to drop their pay loads on automatically computed trajectories at speeds in excess of 600 miles an hour.** Later this year the R.A.F. will commence replacement of the bombs with Blue Steel, winged, self-propelled bombs which can be fired at least 100 miles away from the target being attacked.

Major Russian targets have been shared to give Britain about 70 per cent of the initial targets marked for first retaliatory attack, the main wave of American aircraft, flying from the United States, would not be over their targets until six hours later. With a stockpile of at least 175 deliverable H-bombs, each with a destructive force of at least 12,000 times that of the Hiroshima A-bomb, one senior R.A.F. officer stated "We might hope to finish the job before they got there."

The bomber force, painted white to reflect heat flash, is dispersed over more than a dozen airfields. Even in times of relaxed international tension, aircraft are kept fully fuelled and bombed up. Under conditions of greater stress planes would be further dispersed to more than 40 subsidary airfields with their crews, trained to find and identify their targets in any weather, sitting in the cockpits and capable of taking off in less than 60 seconds.

Apart from the miniaturized, automatic computer which permits bombs to be dropped with an average accuracy of 350 yards from the central aiming point, the Vulcans and Victors feature other top secret electronic marvels including electronic countermeasures with jamming gear powerful enough to blot out all radio and television reception and make radar-directed missiles useless. A few aircraft carry equipment to make them "spoofers" sending out signals which make a single bomber look like a mass attack.

The ultimate aim of Bomber Command will be to equip the aircraft with Skybolt rockets which can be fired at targets 1,000 miles away. This would mean that the aircraft would not have to cross the borders of Iron Curtain countries in order to deliver their nuclear weapons. This program will be under way in three years, meanwhile Commander in Chief, Air Marshal Sir Kenneth Cross states his belief, "that the only certain way to prevent the Russian leaders from crushing freedom by force is to confront them with the constant threat of insupportable retaliation."

To qualify as a "blast resistant" shelter, a structure must be capable of withstanding an overpressureof 30 pounds per square inch (psi), which would occur at range of about 2½ miles from a ten megaton and about five miles from a 100 megaton explosion.

A "Limited blast-resistant" shelter must be able to stand an overpressure of 5 psi, which would occur at a range of about 8½ from a ten megaton and about 18 miles from a 100 megaton explosion.

To give you an idea of overpressure, five psi can pretty well demolish an ordinary frame house.

Milwaukee CD Newsnotes. March 1962.

CAUGHT BY THE CAMERA

Right, Officer in Charge, Southern Zone, Jim Pringle demonstrates fallout patterns to newly appointed Director of Civil Defence for Medicine Hat, Archie Mitchell, on the latter's first visit to zone headquarters, last month.

Left, Deputy Co-ordinator Ernest Tyler and Co-ordinator Arnold Lavoie take their turn in manning the display booth at the Calgary Stampede. The exhibit featured a model fallout shelter and attracted considerable attention from visitors, most of whom dressed western style for the occasion. (See "Only The Brave", page three).

QUOTE

QUOTA

A Roundup of Statements From a Variety of Sources

Russia's 50 megaton bomb would kill up to 12 million people if detonated over a major world capital according to Soviet publication Meshdunarodnaya Shisn (International Affairs) an authoritative political science monthly. The explosion of a bomb of this size, it is claimed, would cause total destruction over a 1,930 square mile area. The Soviet article suggested that in the event of war, the aim would be to destroy all important enemy targets with "a single nuclear strike, or possibly two." Premier Krushchev recently claimed that Russia also has a 100 megaton bomb with twice this power.

From a UPI news report on the front page of The Albertan, Wednesday, August 15.

Present authorized strength of the Canadian armed forces is 134,000; 22,000 in the navy, 60,000 in the army and 52,000 in the air force.

Quick Canadian Facts.

According to a decree recently published by the Bulgarian Government, all citizens who are not liable for military service have to serve in Civil Defence until the age of 55 years. Under this decree the whole population is to receive exhaustive instruction in matters of protection against atomic, bacteriological and chemical weapons.

International Civil Defence Bulletin, Geneva.

It is just as necessary that preparations for Civil Defence should be made in peacetime as it is that the Armed Forces should be prepared. These preparations do not imply that war is imminent. Indeed, they are a deterrent to war. The sight of a country taking calm and sensible precautions against the effects of aggression is likely to make a potential aggressor hold back.

Introduction to Training Course, Northumberland Civil Defence Corps.

MISSILES FOR THE MILLIONS

By R. A. (BOB) McALPINE
Director, Continuity of Government
Division, Alberta EMO

Does the race to produce vehicles the size of skyscrapers capable of carrying multi-megaton nuclear bombs from one country to another, confuse you? Here is an expert guide to man's greatest offensive weapon.

The earliest rockets, used by the Chinese in the 13th century, were military toys best described as unguided missiles. Of a surface-to-surface type, they were usually fired at ground targets from a fixed platform with a gunpowder propellent and a warhead of burning pitch designed to start fires within enemy fortifications. Accuracy was impaired by the inability of its users to calculate the amount of propellent needed to push the rocket a predetermined distance, and the fuel was unsafe in transportation and handling with the result that the weapon passed through phases of enthusiastic research and near abandonment. The British used such weapons during the burning and capture of Washington in the war of 1812.

The advent of rifled guns and good propellents like cordite gave greater accuracy, mobility, safety and speed of firing to long range military support weapons and serious development of the rocket was postponed until the air age introduced a need for weapons with a greater range than that provided by guns.

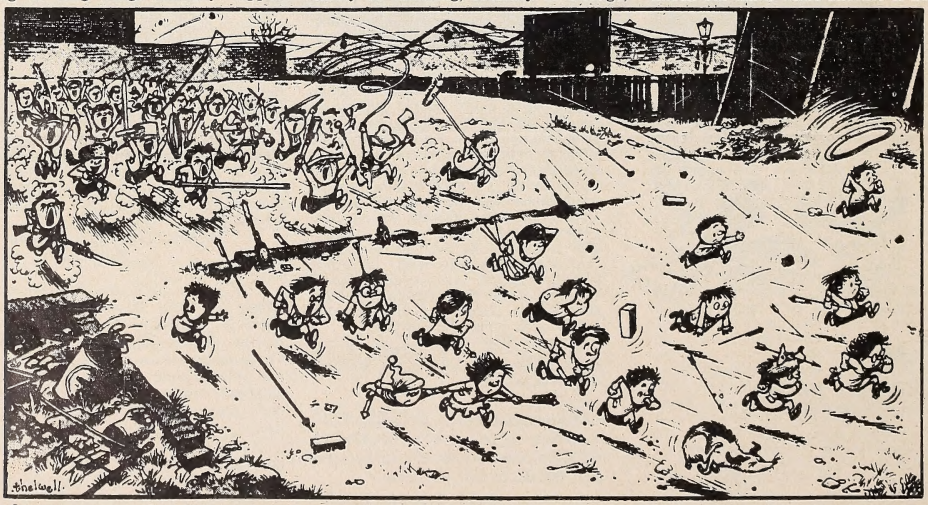
Towards the end of World War Two, the Germans produced a jet propelled flying missile known as the V1, and a true rocket with long range, surface-to-surface capability, known as the V2. The latter was a four-storey monster carrying a ton of high explosives distances up to 200 miles, it was not accurate and had no built-in safety devices with which it could be exploded in space if it decided to inadvertently turn back on its masters. This forerunner of our present long range missiles was propelled by liquid fuel requiring time-consuming preparations for firing, but once fired, it could not be stopped even by today's defensive devices.

The genius behind the development of Germany's rocket weapons was Dr. Von Braun whose technical knowledge was acquired for the United States missile program, and, in the years that followed, enabled the U.S. to put missiles and men into space. Many of Dr. Braun's colleagues were persuaded to assist the USSR in that country's missile program. Work has been continued rapidly in both countries during the post war years and free flights and guided missiles have been produced for both military and civilian uses with a variety of types of fuels and accessories being tested.

Desirable qualities in propellents are safety in handling, stability in storage, ease in transportation, simplicity in preparation and of course quick ignition, maximum thrust and controllable burning. Most missile propellents are made from light fuel oils and an oxidizer in either a liquid or solid state. The liquid fuels are usually easier to control and are more predictable in computing range and accuracy, while the solid fuels are easier to transport and require less preparation. Research in propellents for military use has concentrated heavily on the development of solid fuels and improvements in the rate of burning. Methods, such as the use of star-shaped bundles which provide a greater burning area have achieved good results, however, liquid fuel is more predictable and provides greater thrust. Where mobility and speed in the execution of delivery of the rocket payload are not essential, liquid fuels still give the best performance. Thus, while the military concentrate on solid fuels, liquid propellents are employed in civilian space projects.

Nuclear energy may ultimately supplement or replace present fuels and would create even greater thrust while cutting down the weight of propellent required, thus allowing a greater pay load to be carried farther than by present methods.

Army missile needs are dictated by its job of taking and holding ground in which prime needs are for short-range (up to 300 mile) missiles to supplement guns or cannons as support weapons for troops. Such a missile is required to knock out tanks while another is needed



'I vote we abandon this rocket idea and go back to conventional weapons' (From "De Vierde Macht,

MISSILES FOR THE MILLIONS

(Continued from Page Six)

to fire from ground to air at attacking aircraft, to defend troops and protect cities and industrial complexes. The army too, might be charged with firing missiles from country to country (up to 1,500 miles range) or from continent to continent (inter-continental missiles with ranges up to 500 miles plus) in attack on enemy cities or industries.

To carry out these tasks a wide range of missiles is available thanks to significant developments like the United States Nike family of missiles. The 40-foot Nike-Hercules is the latest in the series to be placed in an anti-aircraft operational role around cities and strategic bases of the U.S. It has a range of approximately 75 miles and can take out attacking bombers with almost 100 per cent accuracy.

The U.S. close-support weapon Honest John has been accepted for artillery support use by the Canadian Army, it is a 27-foot long, solid fuel device capable of firing a conventional or nuclear warhead up to 12 miles in support of infantry. France has had outstanding success with a 3-foot long anti-tank missile with a range of over a mile, which has been purchased by a number of NATO nations, reputed to be able to destroy any tank in the world at this distance.

Still under development is the U.S. Nike Zeus anti-missile missile which, when operational, will provide our first positive defence against missile attack. Armed with a nuclear warhead and with a range of several hundred miles, it will be directed to intercept incoming missiles in space, destroying their nuclear cargo at a safe distance from the target. The Zeus will probably be in operation by about 1965.

Russia's missiles are closely guarded secrets, but it is safe to assume that the 1961 nuclear test series in the Siberian Arctic may well have been testing the USSR version of an anti-missile missile which Mr. Krushchev boasted recently as being able to hit a fly in outer space.

Prime Air Force needs are for defensive air to air, and for longer range air to ground missiles to be fired from aircraft at distant targets on the ground (up to 500 miles). Some Air Forces are assigned to the task of developing and manning long range intercontinental missiles by the U.S. Air Force. These monsters weighing 100 tons or more can be hurled over 5,000 miles to drop nuclear devices of up to 10 megatons on enemy targets, with an expected accuracy of within two miles. Early versions like the Atlas and Titan used liquid fuels, while more recent products such as the Minuteman, fired from bomb-proof silos buried deep underground, have been adapted to solid propellents. Russia is known to have a similar long-range weapon known as the T3, which has been fired distances of up to 7,000 miles in Pacific Ocean tests.

Among air-to-air missiles the British Fire Streak and the U.S. Sidewinder are considered outstanding. These missiles use infra-red homing guidance systems to reach their targets. The Sidewinder was successfully used by the Chinese Nationalist Air Force against Red Chinese planes in the Straits of Formosa, in 1958.

Finally there is the Bomarc, a surface to air, anti-aircraft missile which will assist in defending Canada against enemy bomber attacks. It has a range of several hundred miles, but it not designed to operate against missiles and is not as fast as the Nike-Zeus.

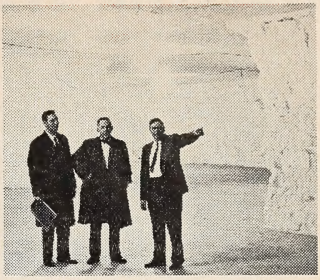
The Navies with their traditional responsibility of protecting shipping and carrying troops and materials, require all the ground to air weapons required by armies and air forces, and additionally have need of an undersea weapon capable of successful firing from submarine to ship or shore. From research on the latter project has come what is perhaps the greatest threat to civilization, the ability to fire a missile from under the sea to up to 1,500 miles inland with an accuracy of two miles from a selected target centre. Most of the world's cities lie within this distance from the sea. The U.S. polaris and the USSR Golem are in this class although the Russian rocket is thought to have a somewhat shorter range. Either rocket can land a two megaton warhead within minutes of launching.

Civilian projects require missiles to put weather and communication satellites in orbit, to procure a more accurate survey of the earth's surface. Much has been accomplished and close co-operation is maintained between military and civilian agencies. Large missiles such as the 100-ton Atlas and smaller missiles like the 50-ton Thor have been used in high altitude space research including the achievement of our age, the man in space program. Canada's modest program of upper atmosphere research is conducted by the army from Fort Churchill, and involves the use of Canadian-made Black Brant missiles.

Private enterprise is expected to participate in space-probing projects as costs decrease and profitable returns are assured. Research in the field of space communication is now under development by private companies such as in the Telstar satellite program which recently made world shattering news.

From fireworks with warheads of flaming pitch to vast missiles which can be hurled with great accuracy to any point on earth, man has built an arsenal of weapons more terrifying than any in history. Yet the same principles used for destruction can be applied to orbit man around his world, to study and conquer his environment, ultimately blasting him free of his gravitational prison.

SHELTER SURVEY



United States plans for surveying shelters for up to 60 million Americans are ahead of schedule and should be completed this year. Pictured above is a team checking the shelter potential of a limestone cave near Kansas City.

In Canada surveys to determine the protective factors of federal buildings is now complete, and Alberta has registered another "first" in completing surveys of provincially owned buildings, although no plans have been issued regarding the identification of shelter areas.

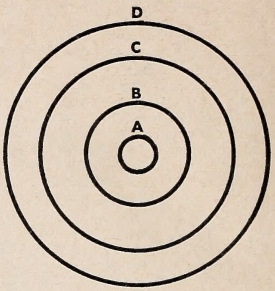
In the U.S. distinctive yellow and black signs, illustrated below, will label shelters with a capacity of over 50 people and should appear in most communities by the year end. The shelters will be stocked with a 14-day supply of food, water and other necessities.

Defence Office of Public Affairs, Washington, Pictures.

We live in an age of peril . . . The hands of the clock on the Bulletin's cover now stand at two minutes to midnight. Not to terrify, certainly, but to warn and to awaken, the clock is intended to be symbolic. Wishing will not stop the clock. The Bulletin may be wrong. It may actually be one minute—perhaps seconds—to midnight.

—From the BULLETIN OF THE ATOMIC SCIENTISTS.

NUCLEAR WEAPON EFFECTS



These tables are based on material compiled for the United Kingdom Civil Defence Training Centre, and present in extremely simplified form, some of the effects of nuclear weapons.

It must be noted that all the figures are greatly simplified for planning and that they are published for the lay reader, actual operations being based on conditions as they are found to exist.

Since a large variety of other factors would affect the damage area, including such matters as the direction and relation of streets to ground zero, height, nature and density of buildings, topography, cloud cover, temperature and humidity, it is not easy to arrive at exact statistics and **for planning purposes figures taken from Volume Two of the Alberta Survival Plan Will Be Used.**

These figures, published as a matter of interest only, consider that the bombs have exploded at optimum height; the altitude at which they are calculated to produce maximum damage. This height varies with the size of air-burst weapons, i.e., 1,000 feet for a 20 kiloton bomb and 8,000 feet for a 10 megaton weapon.

Table showing Blast Effect on Houses and on Blockage of Streets of Various Sizes of Weapons — Radii in Miles from Ground Zero

		20 KT	100 KT	½ MT	1 MT	2 MT	10 MT
DAMAGE RING A Houses completely destroyed, streets impassable.	Ground Burst	⅜	¾	1¼	1½	2	3½
	Air Burst	½	1	1½	1¾	2¼	4
DAMAGE RING B Houses irreparably damaged, mechanical aid needed to clear streets.	Ground Burst	⅝	1	1¾	2¼	3	5
	Air Burst	¾	1¼	2¼	2¾	3½	6
DAMAGE RING C Severe to moderate house damage, progress in streets difficult due to debris.	Ground Burst	1⅝	2¾	4¾	6	7½	13
	Air Burst	2	3½	5¾	7	9	16
DAMAGE RING G Houses lightly damaged, streets open but some glass and tile.	Ground Burst	2½	4¼	7¼	9	12	20
	Air Burst	3	5	8¾	11	14	24

Table showing Fire Situation Caused By Various Sized Weapons — Radii in Miles from Ground Zero

		20 KT	100 KT	½ MT	1 MT	2 MT	10 MT
MAIN FIRE AREA	Ground Burst		¾-2	1¼-3½	1½-5	2-6½	3½-12
	Air Burst	⅛-1⅝	1-3	1½-6	1¾-8	2¼-11	4-20
LIMIT OF ISOLATED FIRES	Ground Burst	1½	3	5	7	9	17
	Air Burst	2	5	8	12	15	28

Crater Dimension in Feet for Ground Level Burst in Saturated Clay	20 KT	100 KT	½ MT	1 MT	2 MT	10 MT
RADIUS OF CRATER	300	510	850	1,100	1,360	2,200
RADIUS OF CRATER LIP	600	1,020	1,700	2,200	2,720	4,400
DEPTH OF CRATER	40	55	80	100	120	170

NOTE: For Radii in Dry Soil divide above values by 1.7
For Depths in Dry Soil divide above values by 0.7

Table showing Heat Effects on People Exposed in the open to Various Sized Weapons — Radii in Miles from Ground Zero

		20 KT	100 KT	½ MT	1 MT	2 MT	10 MT
THIRD DEGREE BURNS Charring of exposed skin	Ground Burst	⅞	1½	3½	4¾	6¼	13
	Air Burst	1⅜	2½	6	8	11	22
SECOND DEGREE BURNS Blistering of exposed skin	Ground Burst	1	2	4	5½	7½	15
	Air Burst	1¾	3½	7	9	13	25
FIRST DEGREE BURNS Reddening of exposed skin	Ground Burst	1½	3	5½	8	11	21
	Air Burst	2½	5	9	13	17	35

Table showing Gamma Effects on people Exposed in the Open to Various Sized Weapons — Radii in Miles from Ground Zero (Air or Ground Burst Weapon)

	20 KT	100 KT	½ MT	1 MT	2 MT	10 MT
50% CHANCE OF SURVIVAL	¾	1	1¼	1½	1¾	2¼
NO APPRECIABLE RISK OF SICKNESS (75R)	1	1¼	1½	1¾	2	2½

WATER BURSTS

Surface or very shallow water.

Heat and immediate gamma radiation greatly reduced. Blast range reduced by as much as 25% from that of an air burst. Serious fallout hazard, close in, including great quantities of radio-active water and mud.

Underwater burst in deep water.

Light, heat and immediate gamma radiation almost entirely absent. Blast shock about 40% less than from a surface or shallow burst, but strong shock waves capable of damaging shipping transmitted through water. Serious fallout hazard, including great quantities of radio-active water.

A Letter from Lew

Same Address.
Sunday Aug.25 '62

Hi Joe,

I guess you needed a magnifying glass to read my last letter - I was trying out an English typewriter and didn't realize how small the thing looked. This one should look a little better or I will shoot the guy who is lending me the machines.

Alf Harrison and I met the Civil Defence Director Harry White at the exhibition where he had a booth. Nothing very elaborate, but enough to keep the idea before the public just like the commercial outfits who don't [redacted] try to sell anything at the ex, but set up a display to let you know they're still around. Quite a few people were asking questions and White said he was satisfied that John Q wants to get answers about Civil Defence. Most people don't rush around looking for facts, but a surprising number are interested and concerned.

The local siren system came under criticism in the paper a few days ago - about time too. We just don't seem to have enough of them and all the preparations in the world wouldn't do any good if we didn't know a warning had been sounded. I sure hope some of the big wheels are worrying about this, although some of the people who holler the loudest don't bother to find out [redacted] if there are any plans to improve it. Still somebody should tell us if it is going to be any use if the baloon goes up. Bill Davies says the siren on the rig coming out of the local fire hall is enough to break a glass (he should know) yet the siren for an alert, which is the same distance from his house, can't be heard at all when the television is on. As I say, a great improvement is needed.

Did you hear about this NEAR thing ? The little black box that you plug into a power outlet and receive a warning in your home. Harry White showed me an article that talked about if four years ago, so this is another development that needs a swift kick, you know where. Why they don't plan to set off a few rockets with explosive charges, maroons I think they call them, like they did in World War 1, I'll never know. At least that would wake up heavy sleepers.

Harry is preparing a little pamphlet for distribution to householders here. He figures we get lots of national and provincial gen, and he plans to let us know arrangements at the local level. Every municipality should prepare local information, I'll bet most newspapers would print it free if they were asked.

So you found out that you have a Director of Civil Defence, and he wants you to take some training. That's good. Harry says you'll learn that you don't need to build a place for your farm machinery to protect it from fallout, all you have to do is cover it with plastic sheeting or something similar, to prevent a major decontamination job. I suppose you wouldn't have any problem with drinking water either, seeing you have a good deep well with a tight cover and a hand pump. As long as the fallout doesn't get into your water supply it will be perfectly safe. You guys in the country will be really be in a better position than us in the city when it comes to planning to survive, but there are lots of things we can do. I have started to put together some of the food we should have, so we'll be self reliant for a few days if bulk food distribution is upset for a while. Its a comfort to know that important things for the family are done, come what may. All the information I needed was in "ll Steps to Survival" and "Welfare Tips for Survival" which I got from Harry White.

I'm going to start working through "ll Steps" and I'll tell you how I'm making out next time I write. Off the bat I've got a battery operated radio which is the number one requirement for getting news if the power goes off. I must remember to get a spare set of batteries for it. Alice has had first aid training and, as you [redacted] know, has done a bit of home nursing, so we could not only look after the family's aches and pains, but maybe lend someone else a hand if we had to.

Well, I'm going to sign off now - I must remember to bug Harry White until he gets out the local information pamphlet. Alice says she'll write to Vi next week some time, and sends her love.

Love from all to all,

Lew

RUSSIAN SPY SHIPS REPORTED

Three Soviet ships, obviously on a large scale military intelligence collection mission were within a few miles of the American nuclear test area in the Pacific. All were heavily equipped to monitor United States activities. However, the Russian vessels were outside the restricted area and were within their rights.

The Defence Department said the Soviet ships had obtained analysis of debris from the tests which would provide information on bomb design, yield and other data of significant military implictions, and stated that the biggest research ship, identified as the 3,600 ton Shokal'Skiy, was equipped with a launching pad for meteorological rockets capable of reaching the ionosphere to analyze the effects of U.S. explosions.

From a Reuter, Washington, report dated May 25, 1962.

MEDICINE HAT AND PEACE RIVER OFFER UNUSUAL PUBLIC DISPLAYS

Civil Defence Director A. H. (Archie) Mitchell, of Medicine Hat, dreamed up a novel presentation for the three-day exhibition and stampede. In conjunction with a Health and Welfare Display, he constructed a 12' x 32' x 10' movie theatre to seat 30 people comfortably on park-bench-type seats.

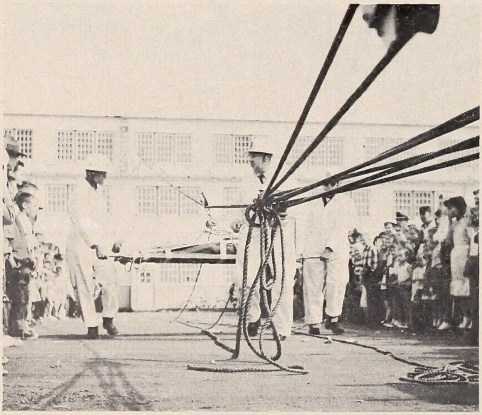
Signs invited the foot-sore visitors to sit down and view Civil Defence Preparedness movies and the theatre was often filled by a captive audience. An estimated 1,200 total attendance was recorded.

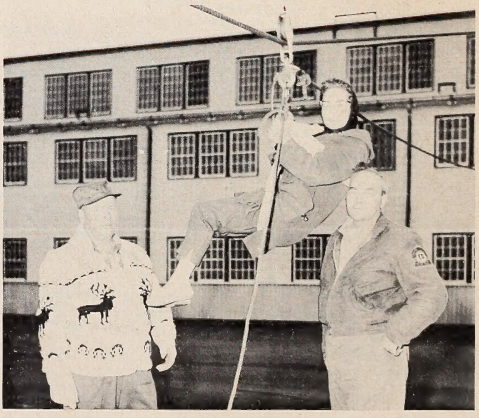
Walls were constructed to allow a two-foot air space at the bottom and a rope was used to "lace" the doorway closed when the theatre was not in operation.

Materials used in the construction included 14 pieces of 2" x 4" in 10-foot lengths, 10 pieces 12-feet and four pieces 16-feet long, 10 sheets of 4' x 8' 5/16" poplar plywood and one and a half rolls of tarpaper. The cost of materials was $51.30 and labour charges for 14 man hours was $21.

Total attendance at the Stampede was 44,690 for the three days and 7,950 pieces of Civil Defence literature were handed out. Most popular film shown was "A Day Called X", other films included "The H Bomb", "Radioactive Fallout" and Part 1 of "The Overall Situation".

A most commendable effort and one which other C.D. directors in Alberta might well bear in mind for future exhibitions.





Excellent pictorial coverage of a first class public exhibition of C.D. skills was given by the Grande Prairie Herald Tribune, following a rescue demonstration staged by Civil Defence crews at the June 17, Northwest Air Show, as these photographs submitted by Officer-in-Charge, Peace River Zone, Sam Dunbar, testify.

Illustrated right, C.D. trainees lower A. Ditter, complete with stretcher, from a hanger roof. Taking part are, left to right, J. Sterling, J. Roy, and D. Willsey. The picture, left shows Mrs. John Ditter, of Beaverlodge, concluding her rescent by rope sling, aided by John Shofner and Civil Defence Unit Director, Jack Roy. Other workers taking part on the high altitude end of the cable, include Blinn Brush, and Bill Wood of Grande Prairie and Dan Willsey of Wembley.

This fine exhibition of team work attracted tremendous public attention and first class newspaper coverage and showed again what an imaginative and enthusiastic approach to public information can achieve at the local level.

—Photos by The Herald Tribune, Grande Prairie.

How Would Biological or Nuclear Attack Affect Our Most Vital Need?

FOOD RESOURCES IN WAR

By E. E. Ballantyne, V.S., D.V.M., M.R.S.H., Director of Veterinary Services, Alberta Department of Agriculture

In the case of a national emergency first priority will be given to saving human lives. Provision of a safe wholesome food supply is the second priority. Without such food the Welfare Services, industry, reconstruction, rehabilitation, etc., all collapse and the recovery of the nation could suffer severely. The food resources in Alberta will be of strategic importance for all concerned because even in peace time approximately 30% of the red meat in Canada is produced in this province while only 7% is consumed here. To this can be added resources of vegetables in our 1,000,000 acres of irrigated land and vast reserves of cereal crops that can be utilized directly and indirectly for human food. Actually the same can be said for Saskatchewan. Eastern Canada could have a serious problem with fallout contamination while in the West vast areas could be unaffected in spite of some contaminated districts.

Alberta is the only province at the moment through the Alberta Emergency Measures Organization where the Department of Agriculture has a positive plan to safeguard the food chain from nuclear warfare contamination.

Potential nuclear warfare could be complicated by biological warfare, especially aimed at livestock production. Well planned enemy action by creating animal and poultry disease plagues could be very devastating on food resources, economics and morale. These potential diseases such as foot and mouth disease, rinderpest, hog cholera, Asiatic Newcastle Disease (for poultry) and several others are all a responsibility of the Federal Department of Agriculture. By judicious forethought its Health of Animals Division are well prepared for such an eventuality. The only dark cloud with this respect is the low density of veterinarians in Canada and the problem of the present educational facilities being unable to increase the numbers of graduates. History records serious animal disease plagues which devastated food supplies and which took many years to eradicate. In some parts of the world these diseases have existed for centuries. The strongest nations have the best food supplies even today.

In the case of nuclear weapons being used on Edmonton and Calgary, the end of agriculture and its food resources should not occur. Taking Edmonton as an example it is possible that an area equalling 40 miles across and 200 miles long downwind would be in the fallout area. A critical analysis of this shows that 75% to 90% of the area within 100 miles of Edmonton would be unaffected. In other words all the farm production in this area would be a safe food resource.

Problems would exist in both the non-fallout and fallout areas. The main problem in the former would be the lack of processing facilities such as dairies, packing houses, bakeries, etc., either because they went up in the cloud of the target city or were unoperative due to damage, lack of utilities, heavy radioactive contamination, etc.

For example, to overcome this the Agricultural component of the Alberta Emergency Measures Organization would activate country slaughter houses, put dairies and milk condensaries, etc., in the unaffected area on a 24-hour operating basis, if necessary, to provide safe meat, milk and milk products. Veterinary inspection and monitoring would be provided to make decisions as to safety and wholesomeness so that the final product could be turned over to the War Supply Agency for distribution to the Welfare agencies, the armed forces and civilians population. This requires coordination with the supply, communication, transport and other officials in the Emergency Measures Organization. It should be made clear that decision on safety for human consumption would be those as required by the standards of the Emergency Health Service. All components of the Agricultural Emergency Organization from Regional Emergency Headquarters to Zone to municipal districts would be utilized to carry out their respective duties. In the latter the Agricultural Service Board would be the core of the activity at this level.

To prevent contamination of the food chain, chaos and wastage of effort, the Alberta Agricultural Emergency Plan requires the quarantine of the Fallout Area at the five roentgen line calculated back to Zero plus one hour. The problems here could be tackled a week or a month after the bomb explosion. By then sufficient checking could be done to supply information as to the exact situation in this area. Based on these facts a policy or program of action could be laid down to restore this area to usefulness as far as possible. To decide on the policy, the best brains available from the University of Alberta, Department of Agriculture, E.H.S. and industry would be brought together in a Fallout Area Utilization Committee similar to the principle involved in 1952-1956 with the Alberta Central Rabies Control Committee. Then the policy decided on would be carried out by the Alberta Department of Agriculture with the help of the Agricultural Service Boards in the municipal districts and counties. We are of the opinion that this is a logical procedure, to protect human lives and to get the best utilization of the food resources in the area.

Examples of some items in the remedial program would be changes in cropping practices, decontamination of Sr. 90 from milk, and slaughter of livestock for many years at special slaughter houses. The point to remember is that the program for the fallout area is not so much due to the effects of radiation but more to protect people from radioactive isotopes (IODINE 131, Cessium 137, and Strontium 90) consumed by livestock getting into the food chain for many years. This goes right back to handling the soil, water, forage, crops, animal husbandry and nutrition and up through the processing period until the products are declared safe for human consumption. Too, due to the long half life of 28 years for Sr. 90, this area could be under supervision for many years.

In conclusion, one could repeat that people in Alberta should have abundant supplies of cereals, milk, eggs, and meat safe for human consumption. Too, Alberta is in a very strategic position to supply vast amounts of such foods for areas deficient in adequate amounts of food or in safe food supplies. In assessing food resources it is clear that dependence on utilizing farm production after the first week becomes of paramount importance as prepared food in warehouses and storage facilities will only last a short time.

Agriculture has to and can continue to produce food. Therefore, food will be available provided distribution facilities can deliver it.

Free Government derives its **power** from the consent of the governed. But a free government also drives its **responsibility** from the consent of the governed. Its purpose is to serve the people and to respond to the needs of the people, whatever changes those needs may undergo in a developing society. We must never forget that the word "government" comes from a Greek word meaning "to steer". We are not only obligated to serve the people; we are also bound to steer a straight course consistent with both fundamental principle and the changes wrought by our continuing pursuit and accrual of knowledge.

From an address to the Western Governors Conference, Anchorage, Alaska, by Edward A. McDermott, Director, Office of Emergency Planning, May 3, 1962.

LIBERATION?

DENVER, May 12 (UPI)—New York Gov. Nelson Rockfeller said today crises such as in Laos possibly could be avoided if the U.S. would take—and keep—the initiative in the fight against Communism . . . Earlier today in a speech at Colorado Springs, Col., Rockefeller said the U.S. must not be afraid to use nuclear weapons to preserve freedom.

Washington Post, May 13.

And, as everybody knows, nothing frees people faster than nuclear explosion.

I. F. Stone's Weekly, May 28.

EXECUTIVE'S GLOSSARY

We have just unearthed a printed card given to us some time ago by the then National Vice Chairman of the Royal Canadian Air Force Association, Stan Malach. It reads in part:

PROGRAM—An assignment that can't be completed in one phone call.

CHANNEL—Trail left by inter-office memos.

EXPERT—An ordinary man more than 50 miles from home.

UNDER CONSIDERATION—Never heard of it.

RE-ORIENTATION—Getting used to working again.

RELIABLE SOURCE—A guy you just met.

INFORMED SOURCE—The guy who told the guy you just met.

UNIMPEACHABLE SOURCE—The guy who started the rumor originally.

NOTE AND INITIAL—Let's spread the responsibility for this.

LET'S GET TOGETHER ON THIS—I'm assuming you are as confused as I am.

WILL ADVISE YOU IN DUE COURSE—If we figure it out we will let you know.

GIVE US THE BENEFIT OF YOUR PRESENT THINKING—We'll listen to what you have to say provided it doesn't interfere with what we have already decided to do.

THE ISSUE IS CLOSED—I'm tired of the whole affair.

HOW'S THAT AGAIN?

Solution to the puzzle in our last edition.

Our EXPERTS in Civil Defence training must INSTRUCT the public on matters relating to NUCLEAR disaster. The effects of KILOTON and MEGOTON weapons should be understood by all, and the after-effects of ROENTGENS of radiation. MISSILE warfare will hold less terrors for those trained to act after the SIREN.

MORE COMPLIMENTS

We are still receiving kind comments on the new format of "Survival" although not much in submissions for publication. Excerpts from two letters from farther afield are printed below.

I like the title, and the contents are well presented. There is a nice balance between local and national information. I shall look forward to receiving a copy . . .

T. Horn, Chairman.
County of Northumbland (England)
Civil Defence Committee.

It was refreshing to read your crisp and comprehensive treatment of Civil Defence activities in Alberta . . . I would appreciate receiving 50 copies for distribution throughout the State.

Brig. Gen. E. M. Llewellyn.
Director of Civil Defence.
State of Washington.

Excellent format and most interesting and readable items. If any boost were necessary to extend interest in Alberta Emergency Measures, I'm certain that this would provide it.

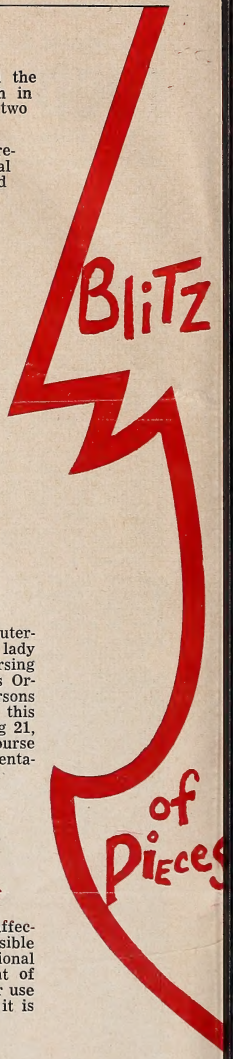
Gordon Grant, Co-ordinator,
Civil Defence, Nova Scotia.

"A" FOR OKOTOKS

Director of Civil Defence for Okotoks, H. Luterbach got excellent publicity recently when 21 lady volunteers completed and passed St. John Nursing Course, sponsored by the Emergency Measures Organization. Okotoks has a fine record of 189 persons having taken training in just over one year, this breaks down as follows: St. John Home Nursing 21, Auxiliary Firemen's Course 13, Orientation Course 53, St. John First Aid Course 51, Nurses' Orientation Course 12, Rescue Course 20.

The last shall be verse

Emergency Public Information Services, affectionately known as EPIS, will be largely responsible for the dissemination of news releases from Regional Emergency Headquarters (REHQ) in the event of war. We offer the following verse to Ottawa for use as an advertisement for staff should they feel it is suitable.

Can you write at EPIStle
Or a nuclear missile,
Be you Catholic or EPIScopalian?
Can you type it (in code)
As a brief EPISode
And love it as if you're Pygmalion?

Your EPIStolary views
Could make valu'ble news,
As an editor seeped in psychology.
You'll be housed 'neath the tile
on a fine EPIStyle,
To give vent to your EPIStemology. J.D.